



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,293	06/30/2003	Daniel A. Day	884.879US1	5819
21186	7590	07/23/2007		
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			EXAMINER	
P.O. BOX 2938			CHUNG, PHUNG M	
MINNEAPOLIS, MN 55402				
			ART UNIT	PAPER NUMBER
			2117	
			MAIL DATE	DELIVERY MODE
			07/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/612,293

**Applicant(s)**

DAY, DANIEL A.

**Examiner**

Phung My Chung

**Art Unit**

2117

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-25,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-25,27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. The indicated allowability of claims 1-6 are withdrawn in view of the newly discovered reference(s) to Katzman et al (4,672,535). Rejections based on the newly cited reference(s) follow.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, for example: the "first TAP control device"; the "second TAP control device"; the "JTAG boundary-scan controller"; the "first memory device"; and "the second memory device"; must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. **Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended.**

The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either

Art Unit: 2117

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112 first***

4. Claims 10, 14, 18 and 22 (see new claims 29-30 of amendment dated on 6/13/06) are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification, page 4, lines 5-8, discloses "Figure 1 shows a block diagram of an exemplary integrated circuit testing system 100. System 100 includes a test controller 110, an automatic tester 120, Test-Access-Port (TAP) master controller 130, a TAP control selector 140, and a device under test (DUT) 150". Therefore, the test controller 110, the automatic tester 120, the Test-Access-Port (TAP) master controller 130, the TAP control selector 140 and the device under test (DUT) 150 are internal of the integrated circuit, but claims 10 and 18 include "wherein the first and second means are external to the integrated circuit"; and claims 14 and 22 include "wherein the first TAP control device and the multiplexer are external to the integrated circuit". Claims 11-13, 15-17, 19-21 and 23-24 are also rejected because they dependent upon the rejected base claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 112 second***

5. Claims 1-8, 14-25 and 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, lines 2-3, "detecting a condition of an integrated circuit... using a first TAP control device" this is not clear whether the "automatic tester 120" or the "device under test 150" does the detecting a condition of the integrated circuit and "a first TAP control device" is not clear as to what it means. There are only a "TAP" and a "TAP MASTER CONTROLLER" recite in Figure 1; and

Lines 4-5, "communicating with the TAP using a second TAP control device..." is not clear as to what it means. There are only a "TAP" and a "TAP MASTER CONTROLLER" recite in Figure 1. Appropriate correction and/or clarification is required. Appropriate correction and/or correction is required.

As per claims 2-6, these claims are also rejected because they dependent upon the rejected base claim.

As per claim 7, line 2, "a first memory device" is not clear whether the first memory device is - - a PAT MEM from an Automatic Tester- - or - - a memory from a TAP master controller- -?

Line 5, "a second memory device" is not clear whether the second memory device is - - a PAT MEM from an Automatic Tester- - or - - a memory from a TAP master controller- -? Appropriate correction and/or clarification is required.

As per claim 8, line 2, "second memory device does not store" is not clear as to what it means. Appropriate correction and/or clarification is required.

As per claim 14, line 2, "a first TAP control device" is not clear as to what it means. There are a "TAP" and a "TAP MASTER CONTROLLER" recite in Figure 1. Appropriate correction and/or clarification is required.

As per claims 15-17, these claims are rejected because they dependent upon the rejected base claim.

As per claim 18, line 3, "a first TAP control device" is not clear as to what it means. There are only a "TAP" and a "TAP MASTER CONTROLLER" recite in Figure 1; and

Line 4, "a second TAP control device" is not clear as to what it means. There are only a "TAP" and a "TAP MASTER CONTROLLER" recite in Figure 1. Appropriate correction and/or clarification is required.

As per claims 19-21, these claims are rejected because they dependent upon the rejected base claim.

As per claim 22, line 2, "a first TAP control device" and line 3, "a second TAP control device" is not clear as to what it means. There are only a "TAP" and a "TAP MASTER CONTROLLER" recite in Figure 1. Appropriate correction and/or clarification is required.

As per claims 23-24, these claims are rejected because they dependent upon the rejected base claim.

As per claim 25, lines 2-3, "a plurality of TAP controllers" what is meant by a plurality of TAP controllers? There is only one - - TAP MASTER CONTROLLER- - recites in Fig. 1. Appropriate correction and/or clarification is required.

As per claims 27-28, these claims are rejected because they dependent upon the rejected base claim.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8, 25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katzman et al (4,672,535) in view of Whetsel (6,763,485).

As per claims 1-6 , Katzman et al disclose a method comprising:

detecting a condition of an integrated circuit having a TAP while communicating with the TAP using a first port ; and

communicating with the TAP using a second port in response to detecting the condition (error or failure). (See col. 3, lines 28-43, col. 4, lines 3-37). Katzman et al communicating with the TAP using the first port and the second port. Katzman et al do not disclose communicating with the TAP using a second TAP control device in response to detecting the condition. However, Whetsel discloses:



A first means (1804) for controlling a test access port (TAP) (1802) of an integrated circuit (180);

A second mean (1806) for controlling a test access port; and

A multiplexer module (1808) coupled between the test access port and the first means and between the test access port and the second means, for selectively coupling the first or second means to the test access port. (See Fig. 18, col. 20, lines 55-57 to col. 21, lines 1-30). Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made to incorporate the first and second TAP control devices as taught by Whetsel into the first and second ports of Katzman et al so that every error that happens can be either corrected, detected or prevented from contaminating the system and reduces test time of the integrated circuit.

As per claims 7-8, these claims are rejected under similar rationale as set forth in claims 1-6.

8. Claims 10-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whetsel (6,763,485).

As per claim 10, Whetsel disclose a system comprising:

A first means (1804) for controlling a test-access port (TAP) (1802) of an integrated circuit (1800); second means (1806) for controlling the test-access port; and a multiplexer module (1808), coupled between the test-access port and the first means and between the test-access port and the second means, for selectively coupling the first or second means to the test-access port. (See Fig. 18, col. 20, lines 55-67 to col. 21, lines 1-30). Whetsel does not disclose that wherein the first and second means are



Art Unit: 2117

external to the integrated circuit or wherein the first TAP control device and the multiplexer are external to the integrated circuit. However, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to set the first and second means external to the integrated circuit or to set the first TAP control device and the multiplexer external to the integrated circuit as desired if needed to do the test. This is because Whetsel does disclose the first and second means, the first TAP control device and the multiplexer are internal to the integrated circuit. (See Fig. 18, col. 20, lines 55-67 to col. 21, lines 1-30).

As per claim 11, Whetsel further discloses wherein the first and second means include respective first and second sets of signal nodes (SDI or TEI and SDO) for outputting or receiving signals from a test-access port (Fig. 18); and

wherein the multiplexer module includes first and second multiplexers, with each multiplexer having a first input node coupled to one of the signal nodes in the first set of signal nodes and a second input node coupled to one of the signal nodes in the second set of signal nodes (col. 32, lines 48067).

As per claims 12-13, Whetsel further discloses a means for communicating a control signal from the first means to the second means to coordinate control of the test-access port. (See Figs. 15 and 18 and col. 21, lines 31-41).

As per claims 14-24, these claims are rejected under similar rationale as set forth in claims 10-13.

As per claims 25 and 27-28, these claims are rejected under similar rationale as set forth in claims 1-6.

9. Applicant's arguments filed 7/2/07 have been fully considered but they are not persuasive because:

Applicant argues that Whetsel does not disclose that wherein the first and second means are external to the integrated circuit or wherein the first TAP control device and the multiplexer are external to the integrated circuit.

Examiner disagrees with applicant because it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to set the first and second means external to the integrated circuit or to set the first TAP control device and the multiplexer external to the integrated circuit as desired if needed to do the test. This is because Whetsel does disclose the first and second means, the first TAP control device and the multiplexer are internal to the integrated circuit. (See Fig. 18, col. 20, lines 55-67 to col. 21, lines 1-30).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung My Chung whose telephone number is 571-272-3818. The examiner can normally be reached on Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-jacques can be reached on 571-272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2117

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Phung My Chung  
Primary Patent Examiner  
Art Unit 2117